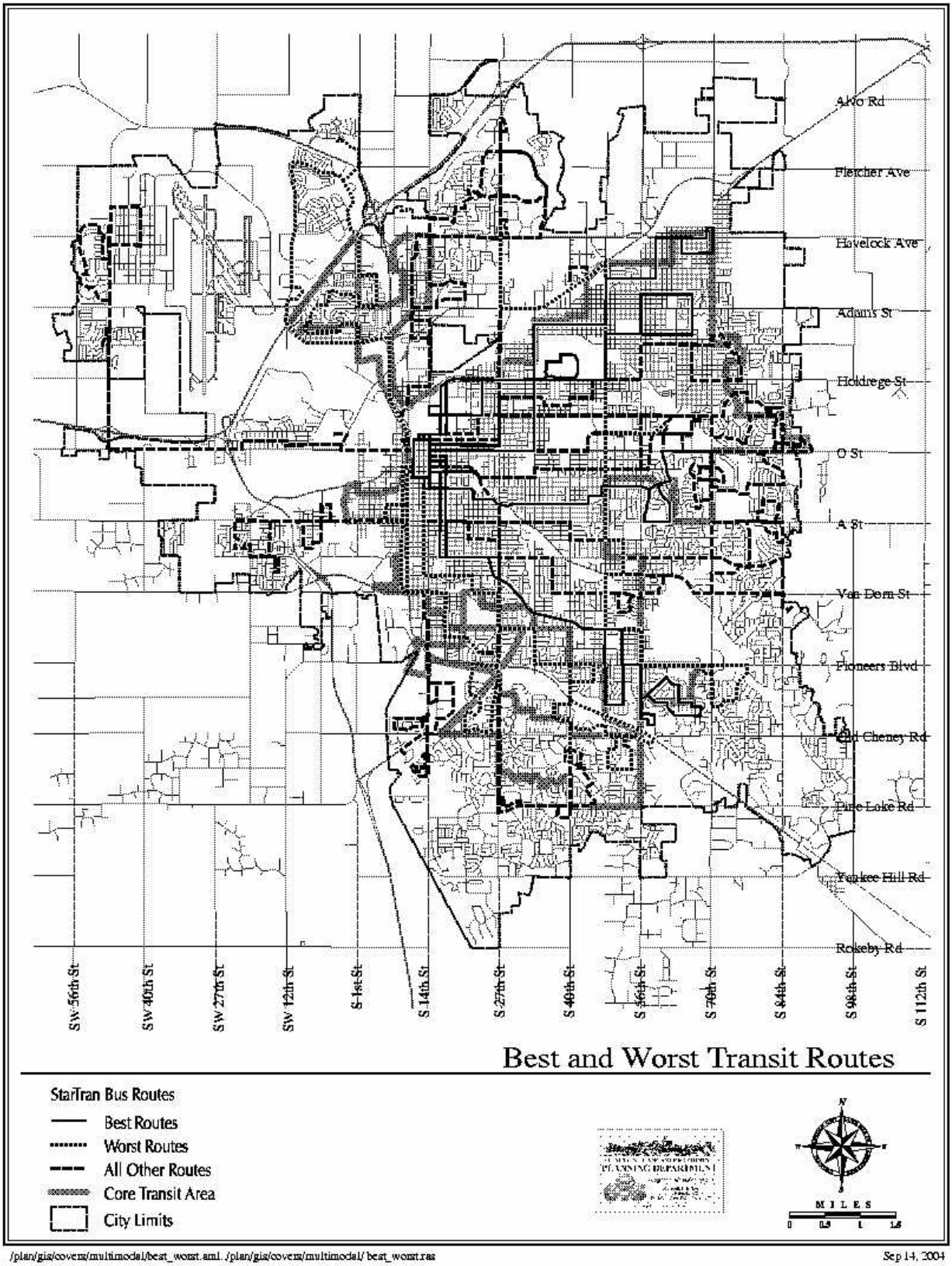
Figure 26. Highest and Lowest Performing Transit Route Locations



Profile of the Lincoln Demand Response Transit System

StarTran provides transportation services for persons with disabilities through three types of services: Handi-Van Program, Brokerage Program, and Accessible Regular Route Transit Services.

Handi-Van Program

The HandiVan Program provides accessible paratransit, "door-to-door" service, by reservation only. There are 9 vehicles in the fleet, which operate between 5:15 am and 10:00 pm on weekdays and 5:55 am and 7:10 pm on Saturdays. Riders can either pay $2.00 per trip or purchase a $60.00 monthly pass. The service provides approximately 29,200 passenger trips per year at an annual operating cost of $1,032,000, or $35.40 per trip. Pre-registration is required.

Brokerage Program

The Brokerage Program provides contracted private transportation services dispatched in place of HandiVan that are also "door-to-door" service, by reservation only, both accessible and non-accessible service. This service operates on the same days and during the same times as the HandiVan Program. The service provides approximately 23,000 passenger trips per year at an annual operating cost of $253,600, or $11.04 per trip.

Accessible Regular Route Transit Services

All 56 transit coaches are accessible/equipped with wheelchair lifts, 20 of which are state-of-the-art "low-floor" buses. Regular route service operates 5:15 am to 7:10 pm, Monday through Saturday. The elderly and people with disabilities receive a reduced fare (50¢ per trip). This service serves approximately 3,000 trips per year by persons using accessibility equipment.

Other Public & Private Human Services Transportation Providers

In 1997, there were approximately 37 other public and private human service transportation providers operating in the City of Lincoln.

Table 29. Service Consumption & Supply (1997)

	Annual Passenger Trips	Annual Vehicle	Annual Vehicle Hours	Annual Operating Costs
Total	382,181	1,972,917	207,193	$3,216,348
Average	10,329	53,322	5,600	$86,928
StarTran				
Handi-Van	28,434	195,175	17,214	$731,164
Brokerage	19,440	92,340	3,974	$159,144
Taxi	9,555	18,147	1,199	$43,573
StarTran Total	57,429	305,662	22,387	$933,851

Source: StarTran

Incentive Programs

StarTran offers a variety of fares, passes and programs for its fixed route and special transportation services (see Table 30). The last fare increase was put into effect on August 28, 2000.

Table 30. Fares

Cash Fare	$1.00
Child (4 years and under)	FREE
Elderly & Disabled	$0.50
Transfers	FREE
Star Shuttle	$0.25
Downtown Zone	$0.25
Handi-Van	$2.00

Source: StarTran

The Monthly Passport ($30) offers unlimited rides on any StarTran bus, including the Star Shuttle. The Adult 20-Ride Ticket Book ($20) provides 20 rides that can be used any time during the year. The Student 20-Ride Ticket Book ($20) is available to Elementary, Junior and Senior High School students for 20 rides. The Elderly & Disabled 20-Ride Ticket Book ($10) is available to persons with a medicare card, Senior Saver photo I.D., or Go-for-Less photo I.D. for 20 rides (see Table 31).

Table 31. Passes

Monthly Passport	$30.00
Adult 20-Ride Ticket Book	$20.00
Elderly & Disabled 20-Ride Punch Pass	$10.00
Handi-Van Monthly Passport	$60.00
Handi-Van 20-Ride Ticket Book	$40.00

Source: StarTran

Employee Bus Pass Program

StarTran works with employers to offer their monthly passport to employees as a fringe benefit (usually on a pre-tax direct payroll deduction basis) and encourages employers to also subsidize the passports.

Alternative Ride Home (ARH) Program

StarTran offers an Alternative Ride Home (ARH) program to commuters who regularly use StarTran services. The ARH program provides up to 5 free rides home a year for emergencies. StarTran riders must pre-register for the service.

University of Nebraska at Lincoln (UNL)/StarTran Bus Pass

Bus passes are issued upon request at no charge to UNL faculty and staff who have already purchased an annual, semester or nine month UNL parking permit. For those UNL faculty and staff who do not purchase a parking permit, bus passes may be purchased on a pre-tax basis at a rate of $120 annually, $90 for 9 months or $45 for the semester.

Beginning with the 2003 Fall Semester, bus passes are issued to all UNL students as a result of a student transit fee now paid through student fees, which were passed during the 2002-2003 school year.

The UNL/StarTran Bus Pass allows faculty, staff and students to ride the UNL Bus Service (two shuttle routes) and commute between the City Campus and the East Campus (StarTran Route 24-Holdrege) as well as ride free on any other StarTran route in Lincoln by simply presenting a current UNL/StarTran bus pass and their UNL I.D. card.

Nebraska Transit & Rail Advisory Council (N-TRAC)

N-TRAC commissioned a study to determine the feasibility of improving the intercity surface passenger transportation system within select corridors in Nebraska. The study, known as the Nebraska Transit Options Feasibility Study, was completed in late 2003. The Lincoln-to-Omaha corridor was one of the corridors examined in the study. Two technology options were studied: Commuter Rail and Regional Express Bus Service.

Commuter rail service could generate ridership within a range of 129,000 to 185,000 annual passenger trips in 2010 in the Lincoln to Omaha corridor. Commuter rail ridership is sufficient to warrant further detailed study of potential demand in this corridor. Considerable special events ridership potential exists in the Lincoln to Omaha corridor. Regional express bus ridership is also viable within the corridor.

Based on a low-cost service plan for commuter rail between Lincoln and Omaha, capital costs were estimated at $67,680,446, and the subsidy per train mile for the low ridership forecast was estimated at $33.91.

Key Existing Transportation Services Conclusions

From a review of the compilation of data and information, key findings can be identified and conclusions can be drawn about status of the existing transportation system in the City of Lincoln.

1. Average daily vehicle miles traveled in the City of Lincoln is currently at an all time high.

2. In general, there is ample parking available in the downtown area.

3. The park-and-ride system is small in scale and limited.

4. Operating expenses have generally increased while ridership has decreased over at least the last five years.

5. There are several inefficient and cost-ineffective routes within the system, such as the West "A" Express (Route 17x), 48th Street Shuttle (Route 18), and Arapahoe (Route 6).

6. The Handi-Van Program provides rides at more than triple the operating cost as compared to the Brokerage Program.

7. StarTran's demand response services (Handi-Van, Brokerage, Taxi) comprise 13 percent of the rides and 23 percent of the cost for all demand response service in the City of Lincoln.

8. StarTran's Employee Bus Pass Program and Alternative Ride Home Program are comparable to other such programs in cities around the country.

EXISTING BICYCLE SYSTEM

The bicycling system in Lincoln consists principally of an extensive network of off-road multi-use paths and, to a much lesser extent, signed on-street routes. There are no on-street striped lanes. Because the off-road trails are not a grid network, but are instead mostly oriented toward the downtown and Salt Creek, they do not function well as a system for utilitarian trips across the city. The lack of a complementary system of either striped on-street lanes and/or continuous collector streets through the major neighborhoods reduces the transportation effectiveness of the off-road trails. The trails do function beautifully for recreation however.

Lincoln is well-suited for the growth of a network of bicycling facilities for several reasons:

- It has a major downtown employment center including the University of Nebraska and the State capital complex
- There is a road network that has few cul-de-sac streets
- The terrain is generally flat
- It has a strong system of parks and neighborhood schools
- There is support for bicycling from the City, the State and advocacy groups.

The deficiencies of the bicycling system in Lincoln are:

- Lack of any on-street striped lanes
- Highly radial alignment of off-road trails, making them almost adequate for commuting to downtown but not for trips to many other destinations
- Lack of a consistent funding source for bicycle facility improvements other than vehicle tax dollars
- Shortage of bicycle lockers and bicycle locking racks
- Lack of direct and continuous collector streets across the new neighborhoods (from one section line road to another)
- Lack of a safe network of bicycle lanes in the central business district
- Lack of connections from the trails network into the downtown (the community is on the verge of several major improvements to this concern)
- Lack of bicycle racks on the StarTran buses
- Insufficient respect for bicyclists from motorists (a problem not confined to Lincoln).
- Lack of development policies encouraging bicycle use and facilitation.

Off-Road Trails System

There are approximately 74 miles of existing and planned paved, off-road paths in the City of Lincoln that are used by bicyclists, runners, walkers, in-line skaters and others. There are an additional 140 miles of existing and planned trails outside city limits but inside the Cordon Area. An additional 138 miles of planned and existing trails are outside the Cordon Area.

The multi-use trail system is composed of concrete paths that are typically 10 feet in width although a few are as narrow as eight feet. Ten feet is the current AASHTO standard, but may

not be ideal for some of these sections because of their traffic volumes and multiple types of users. Twelve feet should be considered as the minimum width as that would allow two bicyclists to ride side by side and accommodate passing better. Fourteen feet would not be too wide in the highest traffic areas. In addition, there should always be a two or three foot wide clear zone on both sides of the path. Also, the paths typically lack a centerline stripe and edge stripes, which promote safety and comfort. The future Rock Island Trail in Antelope Park and the Husker Link Trail will be built 12 feet wide.

Concrete has been judged to be more cost-effective than asphalt for these paths in the long term especially considering the severe freeze-thaw cycles in the Lincoln climate. Fortunately, there are few expansion joints to interfere with in-line skating since the concrete is laid in a continuous pour.

The major trails are MoPac, Billy Wolff, Rock Island, John Dietrich and Salt Creek Levee. None of these paths connects all the way into the Downtown street system at this time (2003) but there are several projects that will soon rectify this:

- The MoPac Trail has just a five-block gap yet to be acquired.
- The Salt Creek Levee Trail on the west side of the city has been completed up to Capitol Parkway from the Wilderness Park Trails and the Bison Trail. Another link to the north will eventually connect it all the way to Haymarket Square. The Jamaica North Trail (on a former railroad corridor along the east side of Wilderness Park) is now being designed and will connect into Lancaster County and eventually to the Salt Valley Heritage Greenway, a major regional trail and linear open space loop.
- The Antelope Valley project will include bicycle paths and sidewalks that will serve as a major link on the east side of downtown and connect the Billy Wolff, MoPac and John Dietrich Trails. The aim is to have a loop all the way around the downtown.
- The Comprehensive Plan recommends that the City create a plan for and implement a system of on-street striped lanes east-west and north-south across the downtown.

Another major gap in the trail system is the fact that the Highway 2 Trail does not feed into the downtown from the south or west. It does link to the Rock Island Trail, but a connection further northwest along Highway 2 would be useful. This trail could link to the Salt Creek Levee Trail or to a system of striped lanes somewhere is the corridor between 8th and 21 Streets.

MoPac Trail is built on an abandoned railroad corridor that runs from central Lincoln out into Lancaster County to Walton, Eagle, Elmwood and Wabash. This corridor was almost lost to the adjacent landowners for lack of public money to buy it. Fortunately, a small group of citizens took a significant private risk and bought the land and later sold it to the City for the trail. That act demonstrates the depth of concern for the trail system by the local advocacy groups and, perhaps, the perilous funding situation for bicycling. There is now a beautiful trailhead building and parking area along the trail at 84th Street, built by the City with corporate assistance.

These trails are maintained by the Lincoln Parks and Recreation Department within city limits and also by the NRD.

Off-Road Paths through Neighborhoods

Lincoln has begun to create off-road trails through new neighborhoods in order to counter the problem described above of no direct collector routes in the new neighborhoods, to provide a safe and pleasant riding environment through the neighborhoods and to provide safe routes to parks and schools.

These ten-foot-wide concrete paths have been built through two neighborhoods in public easements and linear parks that were negotiated during the subdivision review process.

Shared-Use Paths along the Arterial Road System

There are presently only a few bicycle paths along arterial roads but it is expected that future Section-Line roads will include a two-way path on one side of the right-of-way. Arterial roads that currently include off-road paths are:

- 84th Street all the way from the Murdock Trail on the north to just south of Van Dorn Street; that path is planned to be extended south of Old Cheney Road.
- Old Cheney Road from the Rock Island Trail to 70th Street
- 70th Street from Old Cheney Road to just north of Van Dorn Street; lack of right-of-way north of that point reduces this path's utility for the foreseeable future.
- Highway 2 corridor.
- Superior Street.

Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

Arterial Street Standards

In 2001, the City/County Planning, Public Works and Utilities, and Parks and Recreation Departments worked together with a consultant to complete a concept study for mile-line section arterial streets. The purpose of the study was to explore concepts for arterial streets as multiple-use corridors which accommodate the transportation infrastructure needs in planned growth areas, while creating a sense of place and a positive physical image for the community. Several alternatives were explored, including 120', 140', and 160' corridors that included the following elements:

- up to four through lanes for vehicular traffic;
- up to three turn lanes at major intersections (duel lefts and one right turn lane);

- a sidewalk and a trail (where planned) for pedestrian and bicycle circulation;
- appropriate arrangement and spacing of underground utilities;
- street trees and landscape screening with low maintenance plant material.

In May of 2002, the City and County adopted the 2025 Comprehensive Plan which included 120 feet of right-of-way for future arterial streets, with up to 130 feet of right-of-way dedignated at the intersections of two arterial streets or other arterial street signalized intersections. This right-of-way accommodates sidewalks on both sides of the street with separation from automobile traffic. In those instances where a future trail or bike lane in designated along an arterial roadway, the Comprehensive Plan indicates that the corridor should be expanded by six additional feet on the side where the trail will be located in order to preserve the same separation. In addition, the Plan includes guidelines that streets should be safe, comfortable, and interesting to the pedestrian and that they should encourage walking and provide multiple connections within and between neighborhoods.

Striped Bicycle Lanes

- Experienced bicyclists are generally safer riding in a striped lane on the street, along the side of the outer driving lane. The hazards associated with on-street bicycle lanes are:
- No physical separation between the cyclists and the cars or trucks (which are high-volume and high-speed on these arterial roads)
- Conflict at the right-turn weaving point. Special striping and signage should be installed to reduce hazards at the weave area, as many cities have done.

A design improvement for these many miles of Section-line roads might be to include four feet of additional paved width along the side of the outer driving lane and stripe it as a bicycling lane. Space for this facility could be obtained from a combination of the median and the portion of the right-of-way outside the sidewalk. Or, the right-of-way could be widened. Such striped bicycle lanes would supplement, not replace, the two-way path outside the road.

Advanced cyclists tend to prefer striped lanes to side paths because they avoid the intersections dangers, because they are flat through the intersections and, thus, faster and more comfortable, and because those cyclists wish to be treated as legitimate road users.

The drawbacks to including striped bicycle lanes on the future arterial roads would be:

- Pedestrians would have to cross a wider road
- Green space (including street trees) would be lost in the right-of-way, or more right-of-way would be needed

- A hazardous situation is created at the point where the right-turn lane begins (requires signage and striping, and careful cyclists, but is done in other cities)
- Construction cost would be increased.

Since small children on bicycles do not have the skills necessary to ride safely in a striped lane under arterial traffic conditions, they should be accommodated on the side path.

On-Street Bicycling Routes

Striped Lanes

There are no on-street striped bicycling lanes in Lincoln. There may be two reasons for this:

- Lack of space along most of the older arterial and collector streets
- A judgment by the Bicycling Safety Advisory Committee in the 1970s that on-street lanes are unsafe, an opinion that was adopted by City staff.

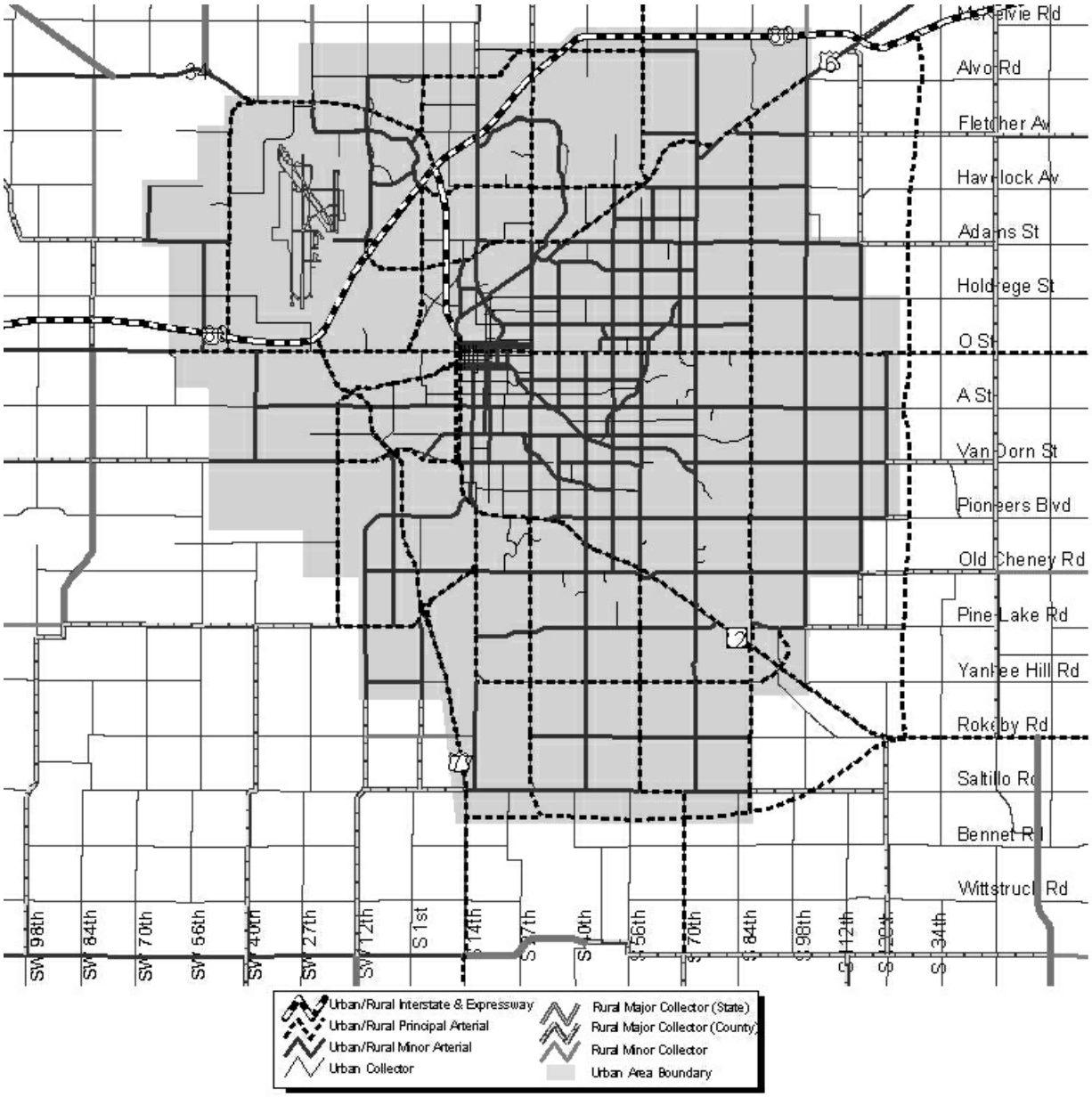
On-street lanes would greatly supplement the off-road trail system and improve the bicycling environment in Lincoln. Striped lanes are more useful than signed routes because they are a constant alert to the motorist of the possible presence of bicyclists, they funnel the bicycle traffic into a defined space on the road, they increase the legitimacy of bicycles as road-worthy vehicles, and they slow the auto traffic somewhat.

Striped lanes should be five feet wide unless they are adjacent to the curb, in which case they may be four feet wide.

Signed Routes

Lincoln has an extensive network of local and collector streets that have been designated by signs as conducive to bicycling. In large portions of Lincoln, these are the only official bicycling facility. The purpose of the signed routes is to guide the inexperienced rider in choosing appropriate streets and to alert motorists of the potential presence of bicyclists. Route signs are especially helpful in the confusing local street patterns of the newer neighborhoods.

Figure 27. Functional Street and Road Classification: Future



EXISTING PEDESTRIAN SYSTEM

Walking in Lincoln as a form of transportation or recreation is supported in several ways:

- Concrete sidewalks on both sides of nearly every street (4 feet wide along local streets, 5 feet wide along arterial streets)
- A local street system that is highly interconnected (there are very few cul-de-sac streets)
- Boulevards with shade trees along both sides of nearly every street (developers of residential subdivisions must plant at least one shade tree along the street for each lot)
- The off-road multi-use trail system (described in the Bicycling System section)
- Ramps at some intersections
- Pedestrian crossing signals, including some count-down signals
- Maps of Safe Walk to School Routes

However, Lincoln is a spread-out, low-density community that is primarily built to accommodate the automobile, making walking a poor choice for most trips.

Pedestrian Centers Plan

The Lincoln-Lancaster County Comprehensive Plan calls for the creation of numerous small districts where pedestrians feel welcome. They should have many of the desirable physical characteristics of Downtown such as direct, continuous sidewalks, safe street crossings, dense land use patterns, buildings along the street sidewalk, and interesting building facades. Refer to Figure 36 on page 84 for the locations of these centers.

Pedestrian Districts include areas such as Downtown (including the university campus), University Place, College View and Havelock. Pedestrian Centers tend to be located along arterial roads and often have strip commercial neighborhood shopping centers.

Safe and convenient sidewalks are essential to the walking environment in all of these locations. Unfortunately, most of them tend to be overly oriented to the auto at this time, with the exception of Downtown. More could be done in the future to retrofit and intensify these and other pedestrian areas if Lincoln is to achieve a gradual shift from its reliance on the auto.

The arterial street standards handle auto traffic very well and create nicely landscaped roadways that reduce the negative effects of the road on adjacent residential areas. Where these arterial roads pass through Pedestrian Centers, walking across the arterial road may be difficult because of the road width, traffic volume and speed.

A possible solution is to switch to a more urban design where the road passes through one of the many planned "pedestrian centers." An urban style arterial might include:

- Narrower medians with less or no landscaping
- Less or no green space outside the sidewalks
- Occasional driveway access for the larger residential or commercial developments (right turn in and out only)
- Street intersections spaced closer than one-eighth mile with right-turn only access
- Parallel parking in "bays" with "bump-outs" at intersections to help pedestrians cross the road.
- Supplemental street lights sized and spaced for a pedestrian environment.
- More closely spaced trees in the boulevard.

An "urban cross section" would slow traffic somewhat but be more conducive to a pedestrian environment in the adjacent land use.

Existing Land Use and Urban Form

Pattern of Growth

The general pattern of land use and development in Lincoln spreads in rings from Downtown. Rather than being concentric around the central business district like many communities' patterns, Lincoln is stretched toward the east and south. Some growth has occurred west and north of Downtown but it is relatively minor compared to the rest of the city. Salt Creek and the major railroad yards west of downtown may have set this growth trend early in the city's history.

The second dominant land use feature in Lincoln is its strong grid layout, characteristic of many western cities that have few natural resources to interrupt the arterial road system.

Density

Lincoln is generally a low-density city because land is plentiful and, hence, relatively inexpensive. Growing mostly in the 20th Century, its mode of transportation has been primarily the auto, which also leads to a dispersed pattern. Most housing is the detached, single-family form, which is relatively land-consumptive. Lincoln hardly had a chance to create the pattern of compact and higher-density development along streetcar lines that some Midwestern cities did, and which contemporary growth could build upon.

On the other hand, sound land development management by the City has resulted in a city pattern that has few major undeveloped tracts within the larger urban area. In other words, there has been little "leap frog development." Also, there are few lakes or wetlands to further reduce the overall urban density.

Mixture

Being an auto-oriented city as noted above, the land use pattern is segregated by type, a common practice in the United States. Developers' practices reinforce single-use projects, and lenders are generally unfamiliar and uncomfortable with mixed-use real estate deals. Only in Downtown and a few other small locations are found vertical mixtures of land use in Lincoln. Moreover, there are few coordinated multiple-use developments.

In the older neighborhoods, the mixture pattern is more fine-grained because development projects were smaller in the past than they typically are today. One of the good and bad features of contemporary land development is that projects, whether residential or commercial, tend to be very large. This improves coordination and protection from incompatible activities but also creates a certain degree of blandness in the urban environment.

Amenities for Pedestrians and Bicyclists

Walking to destinations in most parts of Lincoln is very difficult because of the low-density, dispersed and single-use land use pattern. Bicycling is only somewhat easier because of the higher speed attainable with that machine.

In addition, pedestrians and bicyclists are not considered a high priority by site planners. Once near a destination, one usually has to struggle across a major road and cross a large parking lot to get to the front door.

Only in Downtown (including the University campus) do these conditions not prevail, but this does not mean that these issues do not need to be addressed in these locations as well.

Major Trip Generators

Major trip generators are common origin and destination locations for travelers by all modes, including transit passengers, within the study area. Trip generators include shopping centers, industrial parks, learning institutions and hospitals, among other locations. Another type of trip generator is a major transportation facility, such as an inter modal facility.

This section examines the location of major trip generators in the City of Lincoln.

Employment Centers

Many people rely on public transportation to commute to and from work on a daily basis. A list of the largest employers in the City of Lincoln is displayed in Table 32 on page 72. The location of these employers in comparison to the concentration of civilian labor force can be found in Figure 28.

Figure 28. Location of Major Employment Centers

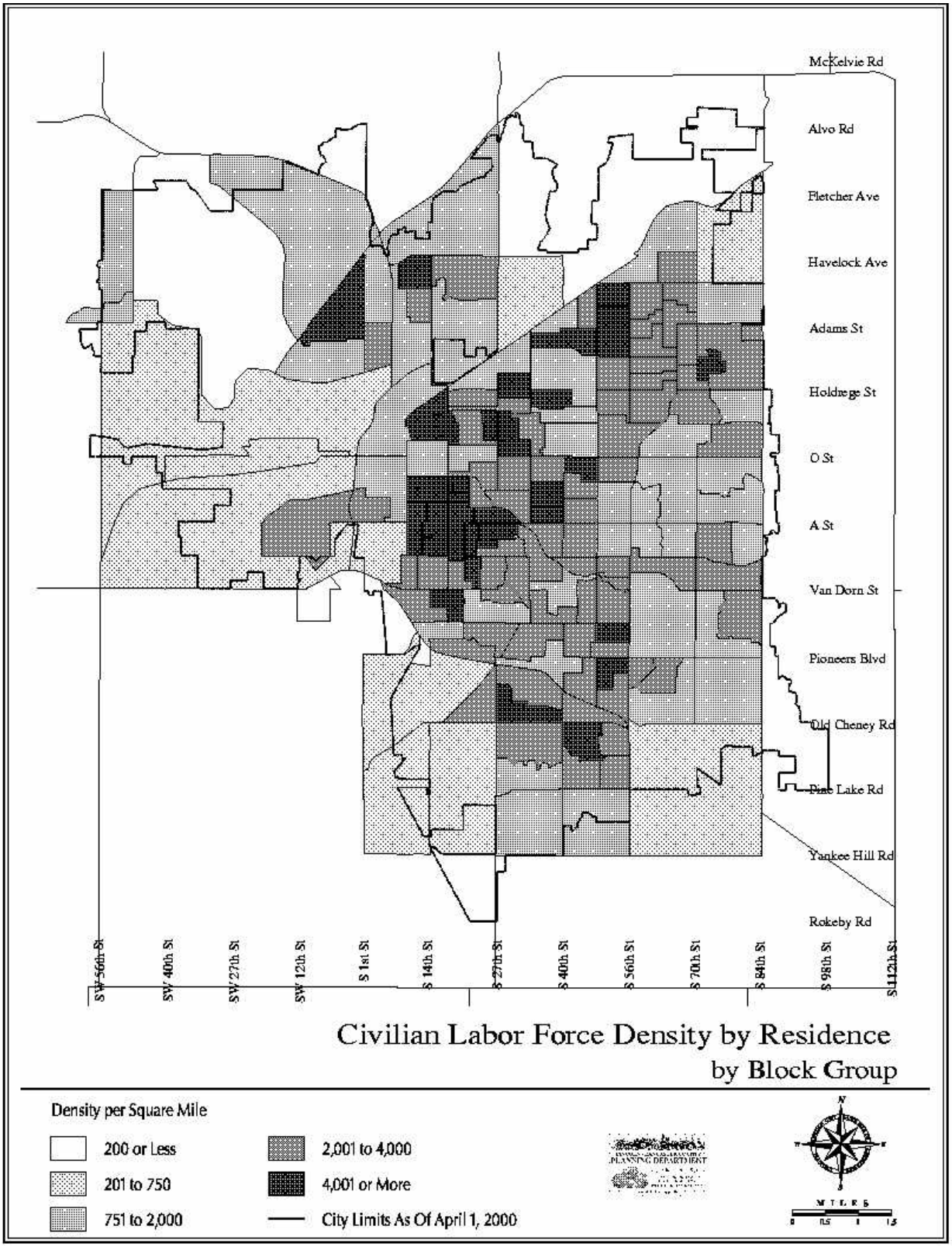


Table 32. Major Employers in Lincoln

Business Name	Employee Range
Lincoln Public Schools	5,000 – 9,999
State of Nebraska	5,000 – 9,999
University of Nebraska - Lincoln	5,000 – 9,999
BryanLGH Medical Center	2,500 – 4,999
ALLTEL Communications	1,000 – 2,499
Ameritas Life Insurance Corp	1,000 – 2,499
B&R Stores, Inc.	1,000 – 2,499
Burlington Northern / Santa Fe	1,000 – 2,499
City of Lincoln	1,000 – 2,499
Duncan Aviation, Inc.	1,000 – 2,499
Goodyear Tire & Rubber Co.	1,000 – 2,499
Plus 11 Others	1,000 – 2,499

Source: Lincoln Partnership for Economic Development, August 2003.

Shopping and Retail Centers

Malls, retail outlets, and shopping centers are also primary transit generators. Figure 29 displays the location of existing major retail and shopping centers with population density. The seven major shopping areas are generally located in low density areas.

Hospitals and Major Clinics

Hospitals and health centers represent important destinations for the community. For this reason, it is of critical importance that these facilities are well served by the transit network. Figure 30 displays the location of these hospitals and other healthcare centers in the City of Lincoln. The four hospitals and five of the seven major clinics are tightly located along an east-west geographic corridor through the central part of the city.

Schools and Training Centers

The Lincoln community has an extensive system of public and private elementary, middle, and high schools. It is also home to six colleges and universities, including the University of Nebraska-Lincoln, Nebraska Wesleyan University, and Southeast Community College, for a total enrollment of 33,609 students. Figure 31 displays the location of Lincoln's educational and training centers. Schools are generally distributed fairly evenly throughout the city.

Figure 29. Location of Major Retail and Shopping Centers

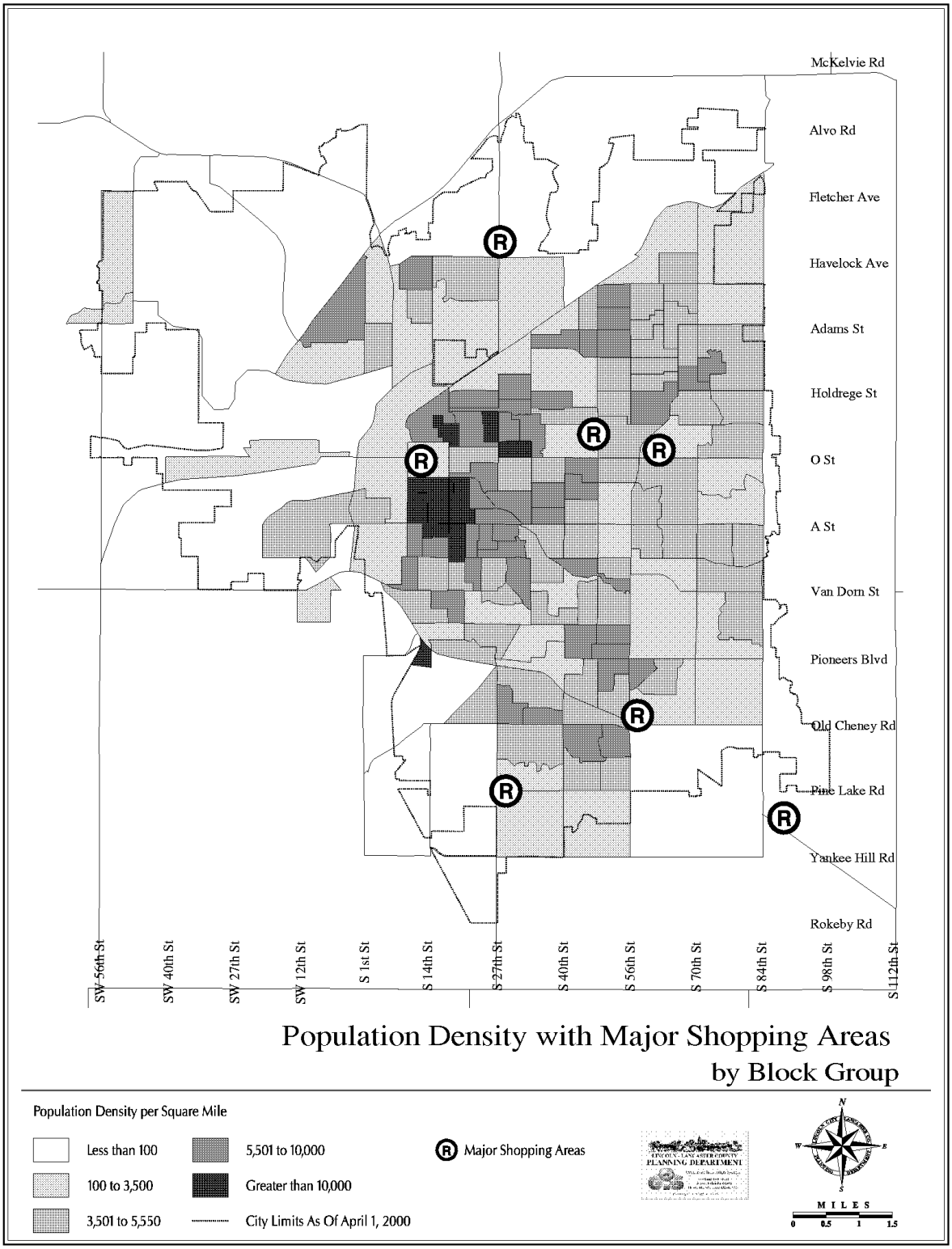


Figure 30. Location of Hospitals and Major Clinics

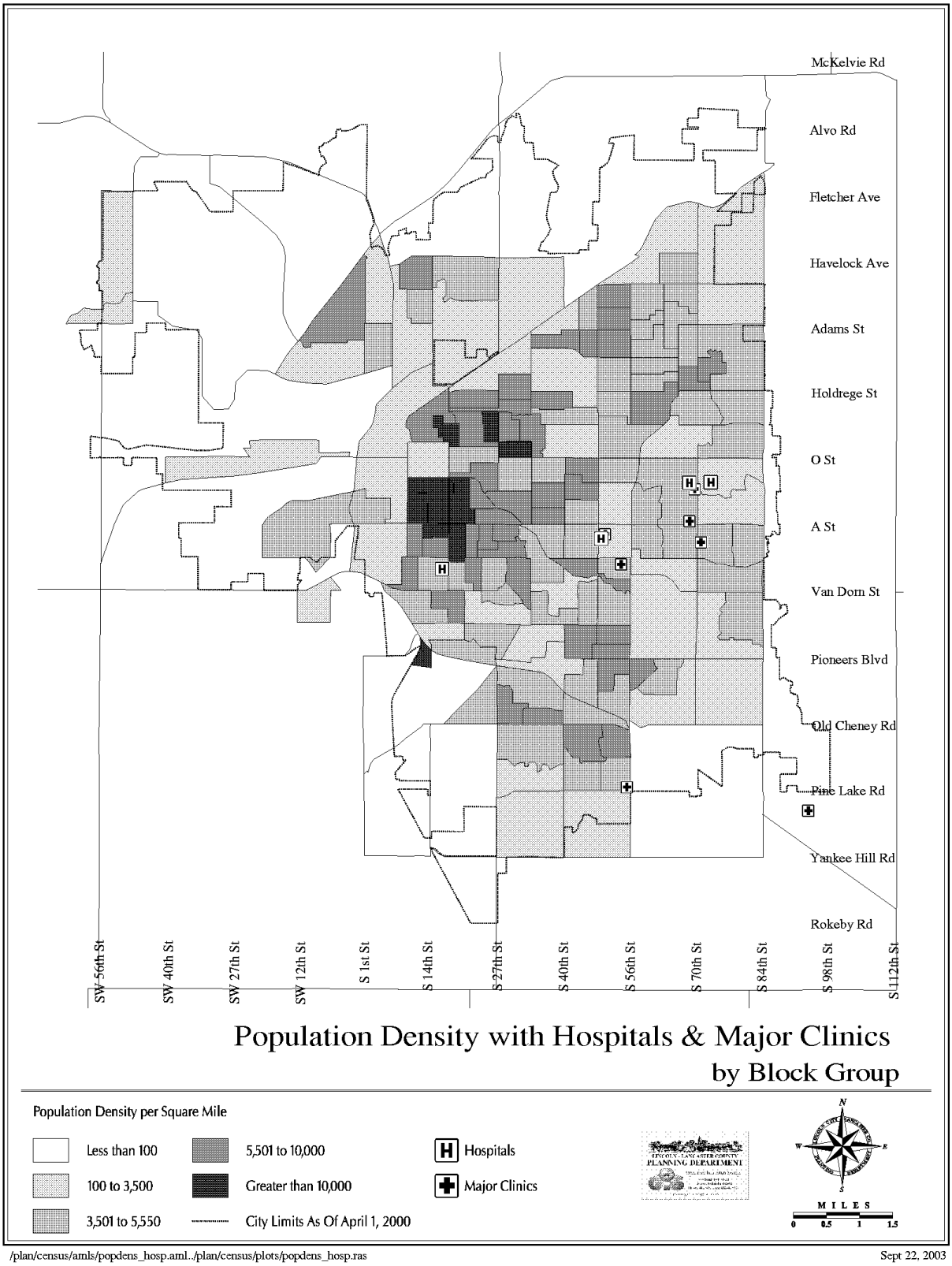


Figure 31. Location of Schools and Training Centers